



Caroline Palmer, Principal Associate

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PROFESSIONAL EXPERIENCE

Synapse Energy Economics, Cambridge, MA. *Principal Associate*, June 2024 – present.

- Conduct analysis and provide expert witness and consulting services on behalf of public interest clients in regulatory proceedings, on topics including electric utility class cost of service, revenue allocation, advanced rate design, avoided cost methodology, and distributed generation interconnection and planning.

Strategen Consulting, Oakland, CA. *Senior Manager*, 2024; *Manager*, 2023 - 2024; *Senior Consultant*, 2021 - 2022; *Consultant*, 2019 - 2021.

- Conducted analysis and provided expert witness and consulting services to state regulatory commissions, state consumer advocates, and non-profits to advance the public interest in regulatory decision-making around electricity service, pricing, and decarbonization.

Metropolitan Area Planning Council Boston, MA. *Clean Energy Fellow*, 2017.

- Provided technical assistance to Massachusetts local government on renewable energy technology and energy planning.

Fulbright Foundation Athens, Greece. *Fulbright Research Fellow*, 2015 – 2016.

- Designed and conducted original, independent research on renewable energy policymaking and implementation in the context of Greece's severe economic crisis

Meister Consultants Group (now Cadmus), Boston, MA. *Analyst*, 2014 – 2015.

- Performed research and writing for renewable energy policy design, analysis, and implementation.

EDUCATION

University of California, Berkley, CA
Master of Public Policy – Energy Policy, 2019

Georgetown University, Washington, DC
Bachelor of Science in Foreign Service – Science, Technology, and International Affairs, 2013

TESTIMONY

Missouri Public Service Commission (WR-2024-0320). Direct Testimony of Caroline Palmer (Cost-of-Service/Rate Design) regarding Missouri-American Water Company's Request for Authority to Implement a General Rate Increase for Water and Sewer Service. On behalf of Consumers Council of Missouri. December 20, 2024.

Missouri Public Service Commission (ER-2024-0319). Direct Testimonies of Caroline Palmer (Revenue Requirement and Cost-of-Service/Rate Design) regarding Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service. On behalf of Consumers Council of Missouri. December 3, 2024 and December 17, 2024.

Nova Scotia Utility and Review Board (M11874). Direct Testimony of Caroline Palmer regarding costs incurred to implement the Renewable to Retail market. On behalf of Counsel to Nova Scotia Utility and Review Board. November 1, 2024.

Maine Public Utilities Commission (Docket No. 2024-00137). Direct Testimony of Caroline Palmer and Eric Borden regarding Stranded Cost Rate Design. On behalf of the Maine Office of the Public Advocate. October 1, 2024.

New York Public Service Commission (Cases 24-E-0322 & 24-G-0323): Direct Testimony of Caroline Palmer, Melissa Whited, and Ben Havumaki regarding the Rates, Charges, Rules and Regulations of Niagara Mohawk Power Corporation d/b/a National Grid for Electric and Gas Service. On behalf of the Utility Intervention Unit (UIU) of the New York Department of State's Division of Consumer Protection. September 26, 2024.

Massachusetts Department of Public Utilities (D.P.U. 23-150): Direct Testimony, Surrebuttal Testimony, and Cross-examination of Caroline Palmer and Ron Nelson regarding Petition of Massachusetts Electric Company and Nantucket Electric Company, each d/b/a National Grid, pursuant to G.L. c. 164, § 94 and 220 CMR 5.00, for Approval of a General Increase in Base Distribution Rates for Electric Service and a Performance-Based Ratemaking Plan. On behalf of the Massachusetts Office of the Attorney General. March 29, 2024, May 3, 2024, and May 20, 2024.

North Carolina Utilities Commission (Docket No. E-7, Sub 1276): Direct Testimony of Caroline Palmer regarding the Application of Duke Energy Carolinas, LLC, for Adjustment of Rates and Charges Applicable to Electric Service in North Carolina and Performance-Based Regulation. On behalf of the North Carolina Attorney General's Office. July 19, 2023.

Oklahoma Corporation Commission (Case No. PUD 2022-000093.): Adoption of Direct Testimony and Cross-examination regarding the Application of Public Service Company of Oklahoma, for an adjustment in its rates and charges and the electric service rules, regulations, and conditions of service for electric service in the state of Oklahoma and to approve a formula-based rate proposal. On behalf of AARP. May 22, 2023.

Maine Public Utilities Commission (Case No. 2022-00152): Direct Testimony and Surrebuttal Testimony of Caroline Palmer, Nikhil Balakumar, and Ron Nelson regarding the Central Maine Power Company's request for Approval of a Rate Change - 307 (7/30/23). On behalf of the Maine Governor's Energy Office. December 2, 2022 and April 6, 2023.

Massachusetts Department of Public Utilities (D.P.U. 21-91): Direct Testimony and Cross-examination of Caroline Palmer and Ron Nelson regarding the Petition of NSTAR Electric Company d/b/a Eversource Energy for approval of its Phase II Electric Vehicle Infrastructure Program and EV Demand Charge Alternative Proposal. On behalf of the Massachusetts Office of the Attorney General. January 5, 2022, and March 22, 2022.

Massachusetts Department of Public Utilities (D.P.U. 21-90): Direct Testimony and Cross-examination of Caroline Palmer and Ron Nelson regarding the Petition of Massachusetts Electric Company and Nantucket Electric Company, each d/b/a National Grid, for approval of its Phase III EV Market Development Program and EV Demand Charge Alternative Proposal. On behalf of the Massachusetts Office of the Attorney General. January 5, 2022, and March 22, 2022.

Massachusetts Department of Public Utilities (D.P.U. 21-92): Direct Testimony and Cross-examination of Caroline Palmer and Ron Nelson regarding the Petition of Fitchburg Gas and Electric Light Company d/b/a Unitil for approval of its EV Infrastructure Program, EV Demand Charge Alternative Proposal, and Residential EV Time-of-Use Rate Proposal. On behalf of the Massachusetts Office of the Attorney General. January 5, 2022, and March 22, 2022.

PUBLICATIONS

Yuang, C., M. Whited, T. Nguyen, S. Schadler, R. Anderson, W. Dejeanlouis, C. Palmer, C. Mattioda, A. Glaser Schoff, S. Koester, J. Hittinger, P. Eash-Gates. 2024. *Utility Engagement Playbook for Industrial Customers: Addressing Power Sector Barriers to Electrification*. Synapse Energy Economics and World Wildlife Fund for Renewable Thermal Collaborative.

Palmer, C. 2019. *Using Low Carbon Fuel Standard Proceeds from EV Adoption to Improve the Efficiency of Electricity Rates*. Berkeley Public Policy Journal.

PRESENTATIONS

Palmer, C. 2022. Utility Transportation Electrification from a Consumer Advocate Perspective. NASUCA Mid-Year Meeting. Indianapolis, IN.

Palmer, C. 2017. Integration of renewable energy in Greek energy markets: A case study. 2nd HAEE International Conference. Athens, Greece.

Resume last updated January 2025

Public Service Company of New Hampshire d/b/a Eversource Energy
Docket No. DE 24-070

Date Request Received: August 20, 2024
Data Request No. OCA 2-002

Date of Response: September 03, 2024
Page 1 of 1

Request from: Office of Consumer Advocate

Witness: Davis, Edward A.

Request:

Refer to the Direct Testimony of Edward Davis at 8 (Bates 19590), describing “the +2.32% incremental allocation per the MCOS.”

- a. Explain how the 2.23 percent incremental allocation is “per the MCOS.”
- b. Explain how the Company derived the 2.23 percent incremental allocation and provide all supporting workpapers for all customer class’s recommended percent re-allocation in live Excel file format with all formulas and links intact.

Response:

- a) There is an inadvertent, typographical error on line 18 of Bates Page 19590. The reference should have stated “per the ACOSS”, not “per the MCOS”. As noted on Bates 19587, line 7-10, “The Company relied primarily on the fully allocated, total class revenue requirements from the ACOSS conducted by Ms. Nieto to allocate revenue requirements to each rate class, with modifications to avoid unacceptable bill impacts.”
- b) Please refer to the Testimony of Edward A. Davis at Bates Pages 19586 through 19597. In the Revenue Allocation and Rate Design section, the Company explains how it derived the 2.23 percent Rate R and R-OTOD-2 incremental allocation as well as each customer class’s recommended percent re-allocations. The live Excel file that shows these calculations is provided in Attachment ES-EAD-11.

Public Service Company of New Hampshire d/b/a Eversource Energy
Docket No. DE 24-070

Date Request Received: August 20, 2024
Data Request No. OCA 2-006

Date of Response: September 06, 2024
Page 1 of 1

Request from: Office of Consumer Advocate

Witness: Davis, Edward A.

Request:

Refer to Attachment ES-EAD-14, p. 1 Rate R.

- a) Provide the percentage of customers with monthly energy usage at each increment represented (i.e. 100 kWh and below, >100 and ≤200 kWh, >200 and ≤250 kWh, etc).
- b) Provide all information and data that the Company has about the monthly energy usage of the Company's low-income customers (except for any personally identifying information), aggregated to the extent necessary to protect privacy (ex: the distribution of low income customers by usage level). Identify the source of all information about low-income customer usage.
- c) Does the Company know the monthly energy usage of the customers receiving a discount under New Hampshire's Electric Assistance Program? Provide this data, without personally identifying information, in live Excel file format with all formulas and links intact.

Response:

- a) Please refer to Attachment OCA 2-006. To respond to this data request, the Company calculated the average monthly usage into usage groups in increments of 50 kWh for only those accounts that had all twelve months during the year that data was collected. Customers were divided into two populations; those not enrolled in the Electric Assistance Program ("EAP") and those enrolled in the EAP.
- b) Please refer to the response to subpart c below.
- c) Please refer to Attachment OCA 2-006. The Company calculated that the average monthly use is identical to subpart (a) above for customers who participate in the EAP. If a customer was enrolled mid-year, the Company included the full twelve months of data when calculating average monthly usage for this population of customers. The Company also includes a bar graph in Attachment OCA 2-006 comparing the percentage of customers in each population for each 50-kWh usage level.

**Public Service Company of New Hampshire d/b/a Eversource Energy
Docket No. DE 24-070**

**Date Request Received: September 06, 2024
Data Request No. OCA 3-012**

**Date of Response: September 20, 2024
Page 1 of 1**

Request from: New Hampshire Public Utilities Commission

Witness: Davis, Edward A.

Request:

Reference is made to Eversources response to OCA 2-001(b), in which Mr. Davis did not respond to the OCAs request that he identify every utility of which [he is] aware that has calculated its customer charge by using an equi-proportional customer charge increase for implementing revenue requirement increases in rate design. Mr. Davis stated that Eversource does not maintain a national database of regulatory proceedings that would be necessary to respond to this question. But he added that Eversource is aware that there are regulatory cases where a rate increase or decrease is accomplished by across-the-board rate adjustments (increasing or decreasing individual rates by a uniform percentage) and that rate change adjustment becomes the de facto rate design for these cases. Please confirm that Mr. Davis is not aware of any specific cases in which a utility has been authorized by its regulator to increase its fixed customer charge according to an across-the-board formula i.e., an equi-proportional increase. If Mr. Davis is aware of any such specific cases please identify them by jurisdiction, docket number, name of witness supporting this approach to rate-setting, and final order approving such an outcome.

Response:

Please refer to Attachment OCA 3-012 which provides a small sample of cases in Vermont where Green Mountain Power adjusted base rates across-the-board (including customer charges) by the base rate percentage, an increase authorized by the Vermont Public Utility Commission.

Please also refer to the Company's response to OCA 2-001 subpart (a), that describes the equi-proportional adjustment to the customer charge as a first step in adjusting the customer charge for the Company's Residential Rate R, where no subsequent changes to the customer charge were made in further allocating costs and designing rates for Residential Rate R.

Public Service Company of New Hampshire d/b/a Eversource Energy
Docket No. DE 24-070

Date Request Received: October 10, 2024
Data Request No. OCA 4-012

Date of Response: October 24, 2024
Page 1 of 2

Request from: Office of Consumer Advocate

Witness: Nieto, Amparo

Request:

Re Nieto Testimony

Refer to the Direct Testimony of Amparo Nieto (ACOSS) at 5 (Bates 19197) regarding the minimum system study.

- a. Why does the Company believe that the identified minimum sized plant equates to the customer-related portion of distribution plant investment?
- b. How does the Company define "customer-related"?
- c. Provide a table showing the capacity of the minimum size equipment the Company identified for each FERC account.

Response:

- a. Please refer to NARUC Cost Allocation Manual ("Manual"), Section II at 90-91, for a description of the Minimum System ("MS") Study method and the rationale behind it. As referenced in the Manual, NARUC considers that the minimum size distribution equipment (pole, conductor, cable, etc.) what would serve the minimum loading requirements of a customer in the Company's service territory represents the customer-related portion of the distribution grid, for that equipment type. Therefore, the Company engineers provided the minimum size for each of the accounts included in the MS study, e.g., Acc. 364, 365, 366/367 and 368 and its installed cost.
- b. The Company understands customer-related cost as the incremental one-time cost that is incurred when a customer is added to the grid. To identify the separation of plant between customer and demand-related cost, the Company followed NARUC's definition of customer-related portion as per the MS Study.
- c. Please refer to Table OCA 4-012 below for the capacity of the minimum size equipment by FERC account in the Company's MS Study.

Public Service Company of New Hampshire d/b/a Eversource Energy
Docket No. DE 24-070

Date Request Received: October 10, 2024
Data Request No. OCA 4-012

Date of Response: October 24, 2024
Page 2 of 2

Table OCA 4-012. Minimum system study – Minimum equipment sizes

Account	Minimum size	Capacity
364	45' Class 2 (P) 35' Class 4 (S)	22,391 lbs * 17,322 lbs *
365	1/0 kW 175 mil ACSR (P) 1/0 TPX OH (S)	220 Amps 205 Amps
366/367	1 AL Prim UG (P) 4/0 3CT UG (S)	150 Amps 240 Amps
368	10 (1PH, OH)	10 kVA

* Denotes vertical load capacity.

Public Service Company of New Hampshire d/b/a Eversource Energy
Docket No. DE 24-070

Date Request Received: October 10, 2024
Data Request No. OCA 4-015

Date of Response: October 24, 2024
Page 1 of 1

Request from: Office of Consumer Advocate

Witness: Nieto, Amparo

Request:

Re Nieto Testimony

Refer to the Direct Testimony of Amparo Nieto (ACOSS) at 9-10 (Bates 19201-2). What is the difference between the trunkline, upstream or backbone primary feeders in Accounts 365-367 that cannot be isolated, and the infrastructure that the MS study *does* isolate (i.e., primary OH lines in Account 365 and primary UG lines 1-PH and 3-PH in Account 366 and 367)?

Response:

Ms. Nieto's reference to trunkline, upstream or backbone primary feeder in her direct testimony refers to that portion of the primary distribution feeder that starts at the low end of the distribution substation transformer and ends at the point where the feeder branches out to primary taps to connect specific loads to the grid. This level of distinction is not tracked in FERC accounts. The MS Study does calculate separate demand /customer shares, but they do not isolate the primary lines that are closer to loads and therefore less diversified than the primary backbone or trunkline feeder.

Public Service Company of New Hampshire d/b/a Eversource Energy
Docket No. DE 24-070

Date Request Received: October 10, 2024
Data Request No. OCA 4-016

Date of Response: October 24, 2024
Page 1 of 1

Request from: Office of Consumer Advocate

Witness: Nieto, Amparo

Request:

Re Nieto Testimony

Refer to the Direct Testimony of Amparo Nieto (ACOSS).

- a. How does the Company distinguish between primary equipment and secondary equipment? Provide definitions of secondary and primary per the Company's distribution system planning manual or other engineering source and identify the source of the definition.
- b. Confirm that residential customers do not receive service at primary voltages.

Response:

- a. The plant is separated in the Company's continuing property record by voltage category based on how the work orders were written and entered into the system. PSNH's lowest primary voltage is typically 4.16/2.4kV (three phase/single phase), with Secondary voltages being typically 120/240 volts.
- b. The residential customer class does not receive service directly at primary voltage, rather the voltage is converted to secondary through a line transformer.

Public Service Company of New Hampshire d/b/a Eversource Energy
Docket No. DE 24-070

Date Request Received: October 10, 2024
Data Request No. OCA 4-017

Date of Response: October 24, 2024
Page 1 of 1

Request from: Office of Consumer Advocate

Witness: Nieto, Amparo

Request:

Re Nieto Testimony

Refer to the Direct Testimony of Amparo Nieto and the Company’s ACOSS. Using the Company’s load research data or most granular data available, provide a summary of individual customer maximum demands for each customer class (ex: in the form of a box and whisker plot, or boxplot).

Response:

The Company provided, as inputs for the external allocators into the ACOS Study, the “Average Customer Peak Demand Per Account” for the major rate classes. Such information is provided in Table OCA 4-017 below. The Company only provided the class hourly load used to determine the class demands in the top 20 hours for the 20 CP allocator, however hourly load data was aggregated across all customers.

Table OCA 4-017 Average Customer Peak Demand per Account by Class

Customer Class	Average Customer Peak Demand (kW)
Residential Non-Heat	5.16
Residential Heat	6.19
Residential OTOD	10.11
G	6.69
G - OTOD	53.8
GV	307.64
Rate B	1,528.97
LG -D	1,995.2
OL	8.85
EOL	14.72

Public Service Company of New Hampshire d/b/a Eversource Energy
Docket No. DE 24-070

Date Request Received: November 13, 2024
Data Request No. OCA 6-007

Date of Response: December 04, 2024
Page 1 of 1

Request from: Office of Consumer Advocate

Witness: Nieto, Amparo

Request:

Re Testimony of Amparo Nieto on Allocated Cost of Service Study

Refer to the Direct Testimony of Amparo Nieto (ACOSS) at 12 (Bates 19204) and Attachment ES-EAD-8, Rate LCS. Explain the factors causing the Load Controlled Delivery Service Rate LCS to require such a high percent rate change to achieve the Company target rate of return of 7.44 percent.

Response:

The calculation of required revenue requirement by LCS customer account is based on data on these customer demands during the 20 top distribution hours and the LCS class non-coincident peak ("NCP"). The kW of demand per customer on the Residential LCS and GS LCS account is a small fraction of the demand per customer for the average residential and general service account since they only include the separately metered radio-controlled loads. Nevertheless, this results in a much higher allocation of revenue requirement compared to current revenue. This is due in part to the current LCS rate schedule that is a discounted rate and assumes customer loads will be interrupted when needed to alleviate the peak demand on the transformers or feeder. The ACOS study recognizes the reality that these loads are ultimately not controlled at the time of the peak for distribution-related reasons.

Public Service Company of New Hampshire d/b/a Eversource Energy
Docket No. DE 24-070

Date Request Received: November 13, 2024
Data Request No. OCA 6-009

Date of Response: December 04, 2024
Page 1 of 1

Request from: Office of Consumer Advocate

Witness: Nieto, Amparo

Request:

Re Testimony of Amparo Nieto on Allocated Cost of Service Study

Refer to the response to OCA 4-016. What is PSNH's highest primary voltage?

Response:

PSNH's highest distribution voltage is nominally 34.5 kV. The Company only has two separate distribution feed sections that are higher voltage (46 kV) that are associated with the former CVEC (GMP) service territory that the Company acquired in the mid-2000s.